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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **EBE, Hiroji, et al.**

Group Art Unit: **2814**

Serial No.: **10/662,819**

Examiner: **Dana Farahani**

Filed: **September 16, 2003**

P.T.O. Confirmation No.: 1103

For: **QUANTUM OPTICAL SEMICONDUCTOR DEVICE**

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

February 9, 2005

Sir:

In response to the Office Action dated **November 30, 2004**, Applicants respectfully request reconsideration of the 35 USC §102(e) rejection of claims 14 as anticipated by U.S. patent Publication US 2002/0162995 A1 to Petroff et al. (hereinafter "**Petroff et al.**").

Petroff et al. discloses a device for converting light from a first wavelength to a second wavelength.

The device comprises a substrate, a spacer layer, coupled to the substrate, a second layer, coupled to the spacer layer, wherein the second layer comprises a different material than the spacer layer, a third layer, coupled to the second layer, wherein the third layer comprises at least one quantum dot, a fourth layer, coupled to the third layer, comprising a quantum well corresponding to each quantum dot in the third layer, a fifth layer, coupled to the fourth layer, wherein the fourth layer and fifth layer comprise a strain induced quantum dot corresponding to each quantum dot in the third layer; and a sixth layer, coupled to the fifth layer, the substrate and

the sixth layer for contacting the device.

Figs. 1D, 1E and 1F show quantum dots 108 in "barrier layer" 106, but the quantum dots do not have a height substantially equal to a thickness of said barrier layer, as recited in claim 14 and as shown in Fig. 8 of the instant application. Quantum dots 108 appear to occupy no more than 2/3 of the thickness of layer 106 in Figs. 1D, 1E and 1F, and there is no teaching in the reference that the quantum dots 108 have such a height as required in claim 14.

Furthermore, none of the drawings in **Petroff et al.** shows that, in a structure of alternating first and second barrier layers, the first barrier layer makes contact with an apex of the quantum dot in the second barrier layer below. Fig. 1F merely shows "stress induced quantum dots 114" appearing to meet these requirements, but such "stress induced quantum dots 114" are merely pseudo-depletion regions created by the strain field produced by the actual quantum dots 108 present in the barrier layer 106 below layer 110 containing the "stress induced quantum dots 114".

Thus, the 35 USC §102(e) rejections should be withdrawn.

The Examiner has indicated that claims 15 and 16 would be allowable if rewritten in independent form. Applicants respectfully defer this action until a FINAL Office Action, if any, is received.

Claims 1-13 and 17-19 have been allowed.

Applicants call the Examiner's attention to the Information Disclosure Statement filed September 11, 2003.

In view of the aforementioned remarks, claims 1-19 are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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